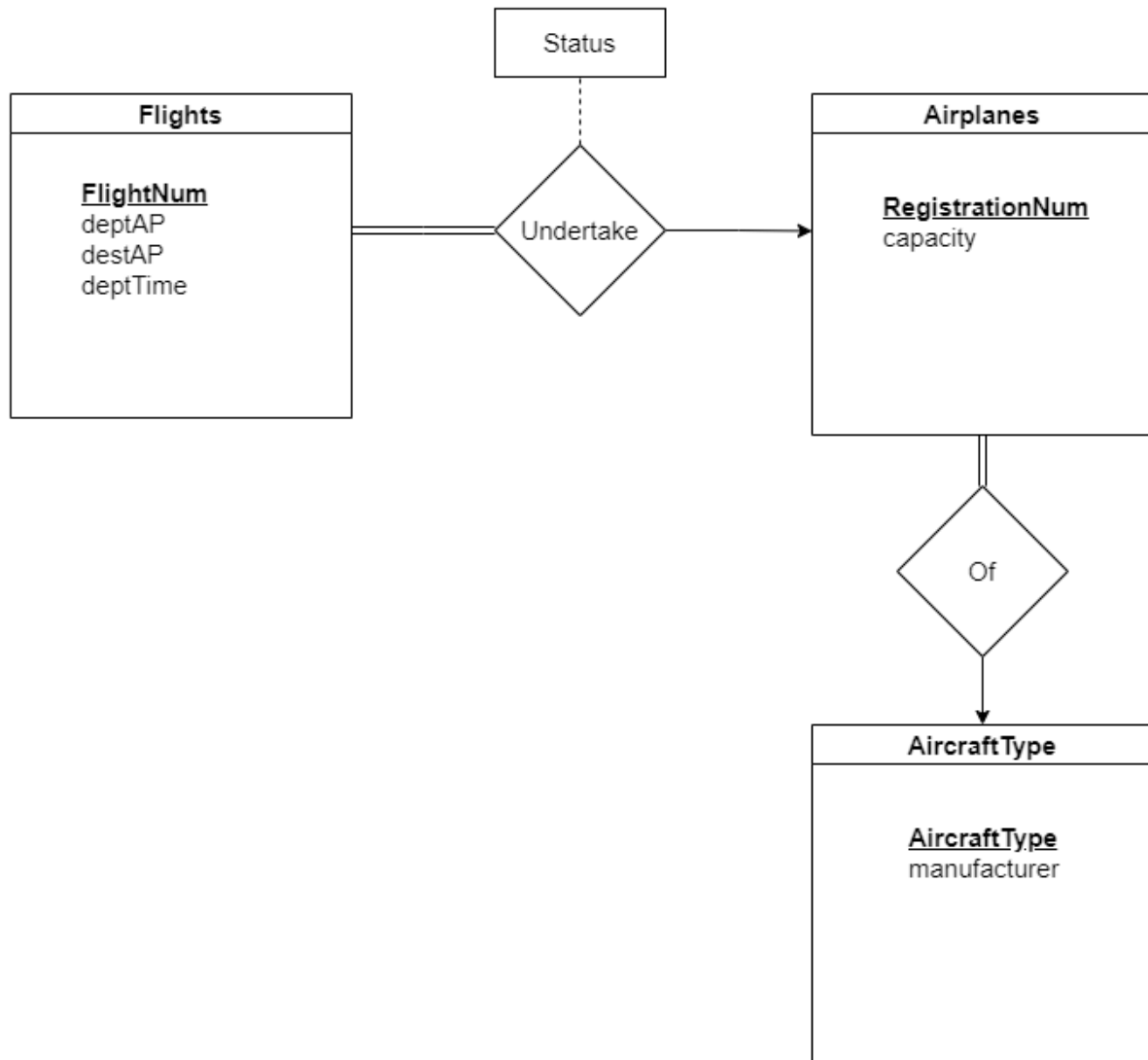


Practice Set 1 Solutions

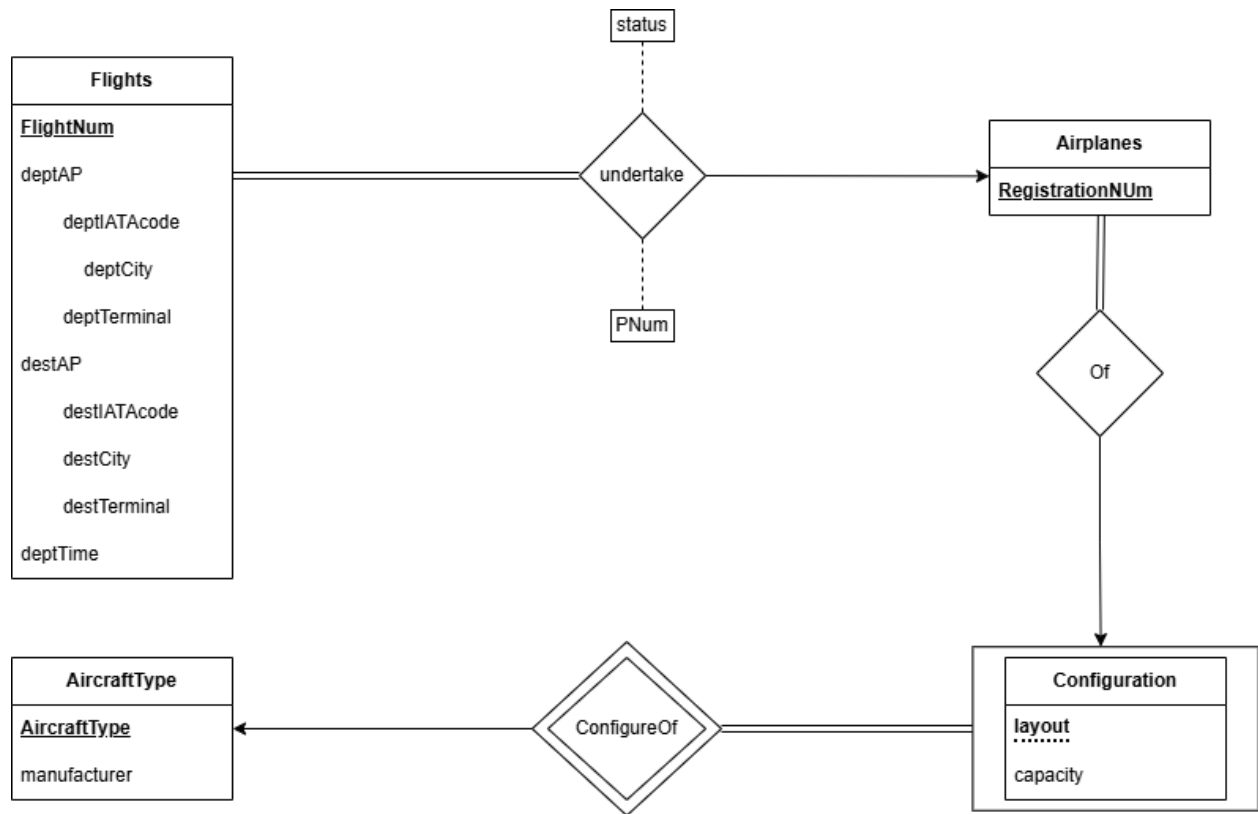
Problem 1

a.

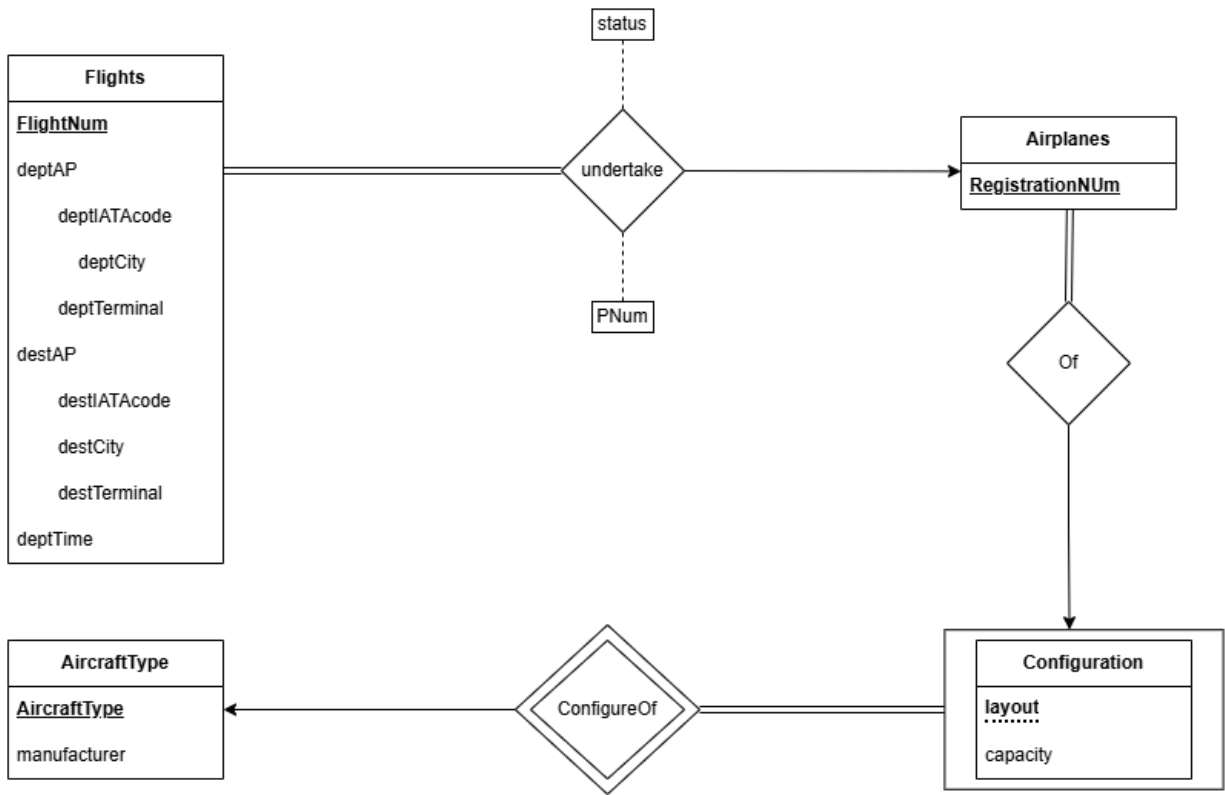
Capacity can either be in Airplanes or AircraftType.



b.

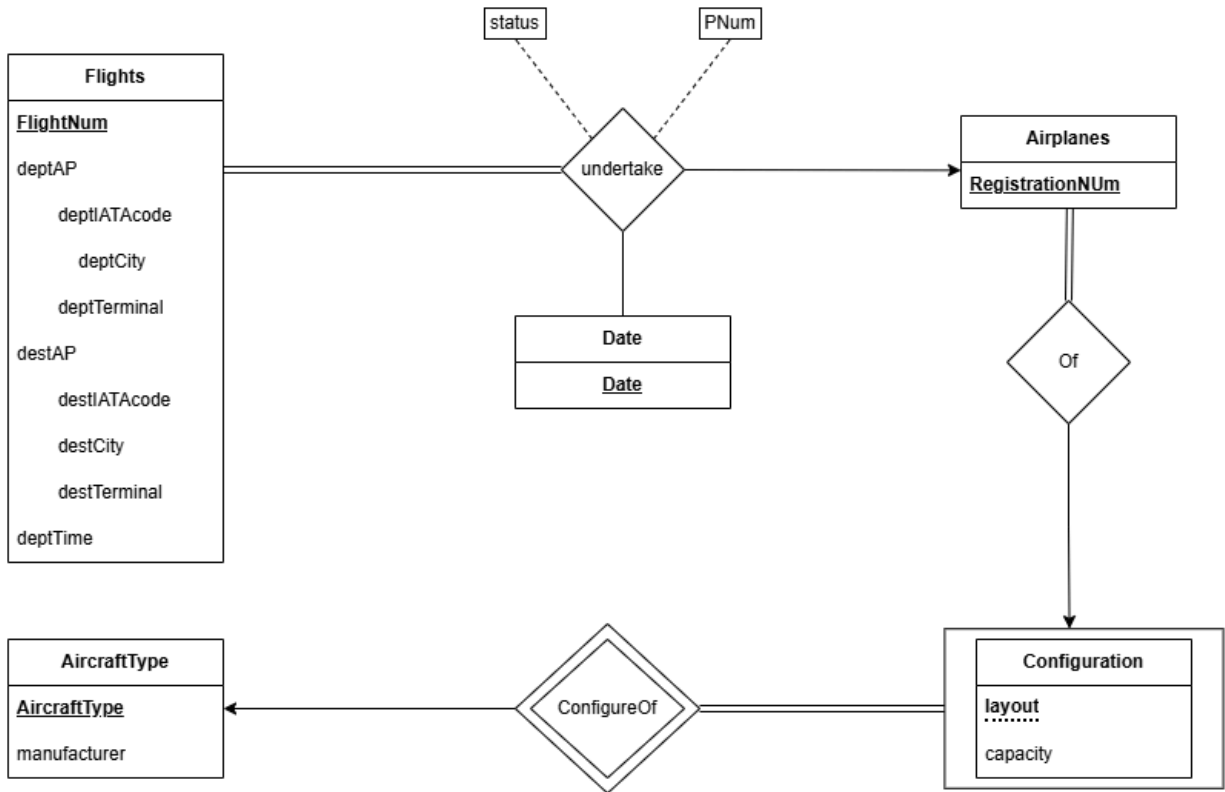


C.



d.

Having a separate table recording airport and link flights and airport with two relationship sets is also okay.



Problem 2

a.

- Each book has exactly one author **False**
- Each book can be published by different publishers **False**
- Each book has at least one category **True (technically, both at least and at most one)**
- A customer can only purchase one copy for each book in one order **False**
- A customer can have different books in one order **True**
- Each Author writes at least one book **False**
- A customer can purchase two copies of the same book as long as they are in different

orders **True (technically, whether in the same or different orders are possible)**

b.

Customers(Customer_id, Last_Name, First_Name, City, State, Zip)

Publisher(Publisher_id, Pub_Name, Headquarter, Phone)

Author(Author_id, Last_Name, First_Name, URL)

Write(Author_id, ISBN)

Author_id references Author(Author_id)

ISBN references Books(ISBN)

Category(Category_id, Category_name, Description)

Books(ISBN, Title, PublishDate, Publisher_id, Price, Category_id)

Publisher_id references Publisher(Publisher_id)

Category_id references Category(Category_id)

OrderItems(Order_id, Item_id, ISBN, Price_Per_Item)

ISBN references Books(ISBN)

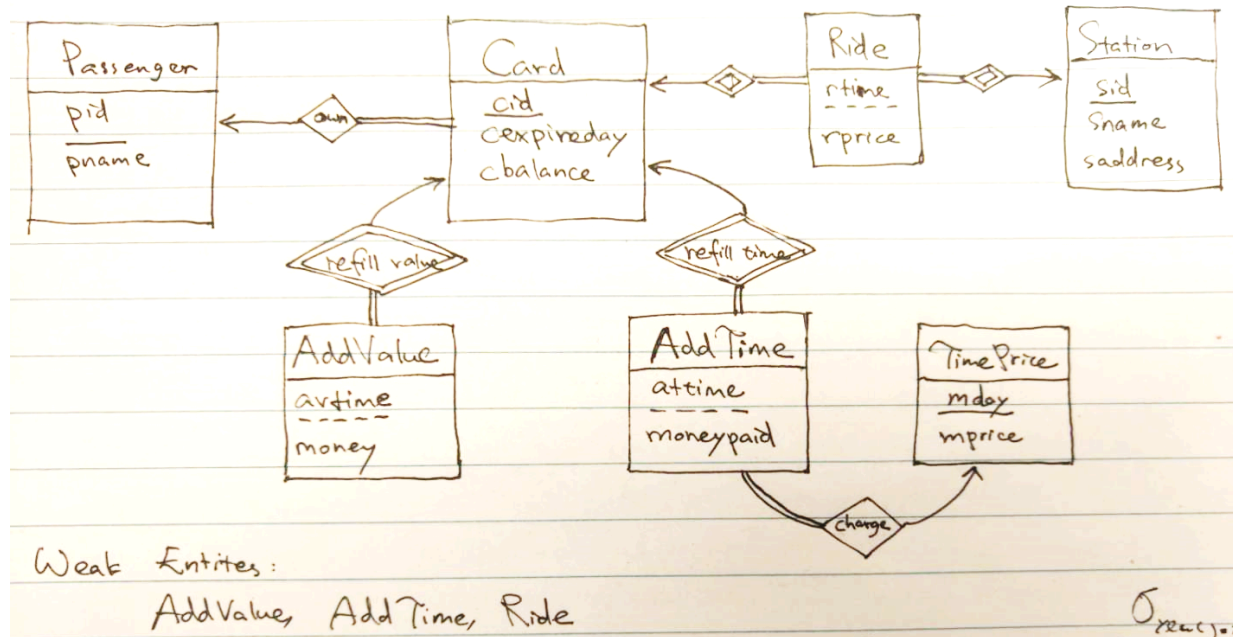
Order_id references Orders(Order_id)

Orders(Order_id, Customer_id, OrderDate, ShipDate, ShipAddress)

Customer_id references Customers(Customer_id)

Problem 3

(a)



(b) Answer:

- Card.pid is a foreign key referencing Passenger.pid
- AddTime.cid, AddValue.cid and Ride.cid are foreign keys referencing Card.cid
- AddValue.mday is a foreign key referencing TimePrice.mday
- Ride.sid is a foreign key referencing Station.sid

(c) Answer:

Passenger (pid, pname);
 Ownership (pid, cid);
 Card (cid, cexpireday, cbalance);
 TimePrice (mday, mprice);
 Station (sid, sname, saddress);
 AddTime (cid, atime, mday, moneypaid);
 AddValue (cid, avtime, money);
 Ride (cid, sid, rtime, rprice);

(d) Answer:

Passenger (pid, pname);
 Card (cid, pid, cexpireday, cbalance);
 TimePrice (mday, mprice);
 Station (sid, sname, saddress);

AddTime (cid, attime, mday, moneypaid);
AddValue (cid, avtime, money);
Pricetable (departuresid, arrivalsid, pprice)
Ride (cid, departuresid, arrivalsid, departuretime, arrivaltime);

Pricetable.departuresid and Pricetable.arrivalsid are foreign keys referencing Station.sid;
Ride.(departuresid, arrivalsid) is a foreign key referencing Pricetable. (departuresid, arrivalsid).